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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,403	06/23/2005	Roger Griffiths	21.1066	9606

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SCHLUMBERGER OILFIELD SERVICES
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EXAMINER

SAINT SURIN, JACQUES M

ART UNIT	PAPER NUMBER
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2856

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/24/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/540,403

Applicant(s)

GRIFFITHS ET AL.

Examiner

Jacques M. Saint-Surin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 6/05.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Reynolds (US Patent 4,008,608) or Warner (EP 0657622 B1).

Regarding claims 1 and 9, Reynolds discloses a method for determining a velocity of ultrasound propagation in a drilling fluid in a downhole environment (col. 1, lines 60-67), comprising:

disposing a first ultrasound transducer (32) adjacent to a second ultrasound transducer (34) such that the front face of the first transducer (32) is offset from the front face of the second ultrasound transducer (34) by a predetermined radial offset distance (col. 2, lines 39-41 and col. 3, lines 41-49).

emitting an ultrasound pulse into the drilling fluid in a borehole (28) using the first ultrasound transducer (32);

detecting (34) the ultrasound pulse after the ultrasound pulse has travelled through the drilling fluid a distance and

determining the velocity of ultrasound propagation from the distance and the travel time (col. 2, lines 67-68 and col. 3, lines 1-3).

Regarding claim 9, it is similar in scope with claim 1 and therefore, it is rejected for the reasons set forth for that claim. Furthermore, Reynolds discloses the signals

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received by first receiving transducer 34 and second receiving transducer 38 are transmitted up borehole 28 via conductor cable 30 to recording equipment 48 at the surface. By noting the difference in arrival times at the two receiving transducers and the distance separating the two receiving transducers, the velocity of the formation can be determined on a continuous basis from the top to the bottom of the well (col. 2, lines 63-68 and col. 3, lines 1-3).

Regarding claim 2, Reynolds discloses wherein the detecting the ultrasound pulse is performed with the first ultrasound transducer (32).

Regarding claim 3, Reynolds discloses wherein the detecting the ultrasound pulse is performed with the second ultrasound transducer (34).

Regarding claims 4-5, Reynolds discloses wherein the detecting the ultrasound pulse is performed with both the first and second ultrasound transducer (32, 34). Reynolds further discloses arrival times at the two receiving transducers and the distance separating the two receiving transducers, the velocity of the formation can be determined on a continuous basis from the top to the bottom of the well (col. 2, lines 67-68 and col. 3, lines 1-3).

Regarding claim 6, Reynolds discloses wherein the detecting the ultrasound pulse is performed by the first ultrasound transducer (37), and wherein the method further comprises: emitting a second ultrasound pulse into the drilling fluid in the borehole using the second ultrasound transducer (34); and detecting the second ultrasound pulse (col. 2, lines 52-58) after the second ultrasound pulse has traveled through the drilling fluid a using the second ultrasound transducer (34).

Regarding claim 7, Reynolds discloses wherein the ultrasound pulse and the second ultrasound pulse are emitted simultaneously (this function is inherently performed by Reynolds since it discloses two different transducers for transmitting acoustic waves or pulses).

Regarding claim 8, Reynolds discloses wherein the drilling fluid is located in an annulus between a tool (26) and a borehole wall (col. 2, lines 58-63).

Regarding claim 10, Reynolds discloses the apparatus according to claim 9, wherein the first ultrasound transducer (34) and the second ultrasound transducer (76) are disposed on an outside surface of the tool (20).

Regarding claims 1 and 9, Warner discloses a method for determining a velocity of ultrasound propagation in a drilling fluid in a downhole environment (col. 1, lines 60-67), comprising:

disposing a first ultrasound transducer (34) adjacent to a second ultrasound transducer (76) such that the front face of the first transducer (76) is offset from the front face of the second ultrasound transducer (34) by a predetermined radial offset distance (col. 8, lines).

emitting an ultrasound pulse into the drilling fluid in a borehole (28) using the first ultrasound transducer (32);

detecting (34) the ultrasound pulse after the ultrasound pulse has traveled through the drilling fluid a distance and determining the velocity of ultrasound propagation from the distance and the travel time (col. 2, lines 67-68 and col. 3, lines 1-3).

Regarding claim 2, Warner discloses wherein the detecting the ultrasound pulse is performed with the first ultrasound transducer (34).

Regarding claim 3, Warner discloses wherein the detecting the ultrasound pulse is performed with the second ultrasound transducer (76).

Regarding claims 4-5, Warner discloses wherein the detecting the ultrasound pulse is performed with both the first and second ultrasound transducer (34, 76).

Regarding claim 5, Warner further discloses Fig. 3b shows the stand-off distance SD about the circumference of the borehole wall 24 at the longitudinal

Regarding claim 6, Warner discloses wherein the detecting the ultrasound pulse is performed by the first ultrasound transducer (34), and wherein the method further comprises:

emitting a second ultrasound pulse into the drilling fluid in the borehole using the second ultrasound transducer (76); and detecting the second ultrasound pulse (col. 2, lines 52-58) after the second ultrasound pulse has traveled through the drilling fluid (28) a using the second ultrasound transducer (34).

Regarding claim 7, Warner discloses wherein the ultrasound pulse and the second ultrasound pulse are emitted simultaneously (this function is inherently performed by Warner since it discloses two different transducers for transmitting acoustic waves or pulses).

Regarding claim 8, Reynolds discloses wherein the drilling fluid (28) is located in an annulus (see: Fig. 1) between a tool (20) and a borehole wall (24).

Regarding claim 10, Warner discloses the apparatus according to claim 9, wherein the first ultrasound transducer (34) and the second ultrasound transducer (76) are disposed on an outside surface of the tool (20).

Regarding claim 10, Warner discloses wherein the first ultrasound transducer (34) and the second ultrasound transducer 76) are disposed on an outside surface of the tool (20), see: Fig. 1.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Moore (US Patent 2,701,123) discloses an apparatus for drilling boreholes.

Bodine, Jr. (US Patent 3,211,243) discloses a sonic drilling by rotating the tool.

Arps (US {Patent 2,978,634) discloses an apparatus for logging wells.


Peeters (US Patent 6,415,648) discloses a method for measuring reservoir permeability using slow compressional waves.

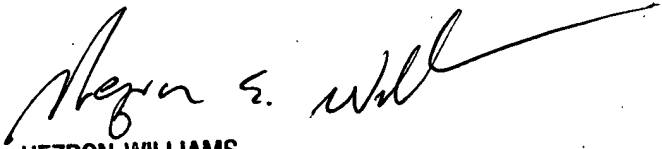
4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacques M. Saint-Surin whose telephone number is (571) 272-2206. The examiner can normally be reached on Mondays to Fridays between 10:30 A.M and 800 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Jacques M. Saint-Surin
January 17, 2006


HEZRON WILLIAMS
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